Ridgeville Road Bridge
Spanning Bean Creek
West of M-156
~~City of~~ Morenci (vicinity)
Lenawee County
Michigan

HAER No. MI-109



PHOTOGRAPHS

WRITTEN DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Great Lakes Systems Office
Department of the Interior
1709 Jackson Street
Omaha, Nebraska 68102-2571

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# HISTORIC AMERICAN ENGINEERING RECORD

## RIDGEVILLE ROAD BRIDGE HAER No. MI-109

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| Location: | Ridgeville Road, Spanning the Bean Creek<br>Section Lines 24 and 25<br>T8S, R1E<br>~~Medina Township~~ (Morenci, MI, 49256, vicinity)<br>Lenawee County, MI<br><br>UTM: 16.7288072.4625795<br>Quad: Clayton, MI, 1:24,000 |
| Date of Construction: | 1902 (estimated) |
| Engineer:<br>Architect: | Unknown<br>Unknown |
| Present Owner: | Lenawee County Road Commission<br>2461 Treat Highway<br>Adrian, MI 49221 |
| Present Use: | Closed (1988). Formally, vehicular traffic. |
| Significance: | The bridge is part of Lenawee County's local roadway system which primarily serves existing agricultural uses and related traffic. The bridge is a truss leg bedstead, pony truss structure. It is one of three known surviving examples of similar design to exist in the State of Michigan. |
| Project Information: | An evaluation by qualified engineering personnel advised replacement of the bridge. To mitigate the adverse effect, the State Historic Preservation Officer stipulated documentation of design elements of the bridge. This documentation was undertaken to fulfill that stipulation.<br><br>Westshore Engineering & Surveying, Inc.<br>Consultants to the Lenawee County Road Commission<br>2534 Black Creek Road<br>Muskegon, MI 49444 |

Summary Description of Bridge and Setting

The bridge carries Ridgeville Road over Bean Creek. The bridge is locally known as the Ridgeville Road Bridge. The bridge is located approximately 2.3 miles north of the City of Morenci, MI, on the common line of Sections 24 and 25, Medina Township, Lenawee County, MI (T8S, R1E). This location is approximately 10.0 miles southeast of the City of Hudson. The bridge site is approximately 1.3 miles west of M-156 and 5.3 miles east of US-127. An active track of the Norfolk & Western Railroad is approximately 0.5 miles east of the bridge.

The bridge was originally constructed and used as a public structure to permit the crossing of Bean Creek by vehicles.

The Ridgeville Road Bridge is a steel truss leg bedstead, pony truss, structure. The bridge has a total length of 52.0 feet, with two spans of 24.0 feet each, and a width of 14.0 feet. The estimated construction year of the bridge is 1902. The approaches consist of compacted sand and gravel. The bridge has been closed since 1988 due to its deteriorated condition.

Land use within the general area of the bridge site is predominately agriculture, however, there is the slow emergence of non-farm single-family home sites. Farm properties are oriented to grain crops and pasturing. The nearest structures are in excess of 500 feet distant. It has been determined by the State Historic Preservation Officer that removal of the bridge will not impact said structures or other known resources.

Based on detailed inspection of the bridge by qualified personnel, the following deficiencies are noted:

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| a) Abutments: | Major cracks throughout with settlement and loss of backfill. There is significant scour damage. |
| b) Metal: | All metal components exhibit significant rusting and fatigue. |
| c) Floor Beams: | All beams are rusted with several totally deteriorated. |
| d) Deck: | Wooden deck is rotted. Holes in various locations due to rotting. |
| e) Railing: | Completely rusted and deteriorated. |
| f) Paint: | Non-existent. |
| g) Channel: | Poor condition with lack of maintenance potential. |
| h) Rating: | Operating rating is non-existent. Bridge is closed. Prior to closure, rating at 2 tons (rating refers to per axle load limit capability). |

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| I) Inventory: | Inventory rating is non-existent. Bridge is closed and will not support vehicular loads. (Rating refers to per axle load limit capability based on engineering assessment.) |
| j) Load Capacity: | Bridge will not support vehicular loads. There is no safe load capacity based on the condition of the bridge. |
| k) Structure: | Intolerable structural condition with continued closure recommended. |
| j) Geometry: | Intolerable condition with structure not meeting acceptable standards. Roadway width is 14.0 feet wide. Design standard for this location is 31.2 feet to safely accommodate two lanes of traffic. |

Date of Construction and Alterations (Bridge and Site)

The bridge was constructed around 1902. Since that period, no record of alterations has been maintained. Based on visual observation of the road bed, abutments, and approaches, it appears limited maintenance may have taken place to prevent total deterioration and provide for some level of use. Since closure of the bridge (June, 1988), no maintenance has occurred.

The region has historically been used for agriculture. That use continues.

Detail Pursuant To Those Involved With Bridge Design and Construction

The designer of the bridge is unknown. The Massillon Bridge Company of Massillon, Ohio, is thought to be the contractor based on the nature of construction, type of bridge, and design. The bridge contains no name plate, plaque, or other identification marker. No bridge plans are available.

Technology Used

The bridge is a steel structure, using a truss leg bedstead, pony truss design. This design is common for short-span bridges constructed in the 1870's and 1880's, but less common thereafter.

Use of Structure

Prior to closure in 1988, Ridgeville Road Bridge served primarily agricultural and residential traffic. Although used up to time of closure, the bridge's geometrics and weight limits precluded use by many farm vehicles. The size and weight of modern tractors and associated field equipment were generally too heavy and/or wide for the bridge. Secondary bridge uses included postal vehicles, emergency vehicles, and limited commercial traffic.

Ridgeville Road functions as a local east/west arterial with direct connection to M-156 and US-127. This linkage offers efficient vehicular routing to the nearby cities of Hudson and Morenci, and other regional urban centers.

Historical Significance

The bridge is a steel, truss leg bedstead, pony truss structure. The bridge is significant due to the limited number of similarly designed structures currently existing. Based on information provided by the Michigan State Historic Preservation Officer, three surviving examples of similar design are known to exist in the State of Michigan

Background and Contextual Information

Historically, the system of local roads within the State of Michigan was based on the use of (land survey) section lines for placement purposes. The results of this are evidenced throughout the state. One has only to examine local county roadway maps to observe that most public roads clearly follow section line boundaries. The lack of deviation from section lines thus established a majority of the state's water crossing locations. Modification to the use of section lines for road and bridge placements generally happened only through the occurrence of major physical (natural) or cultural (man made) barriers demanding an alignment change. For instance road builders faced with an extremely wide river crossing might seek a narrower passage.

The crossing of Bean Creek at Section 24 and 25, Medina Township, did not present a barrier of any significant magnitude when compared to the surrounding area. The creek's width and elevation were conducive to construction. The presence of impeding cultural barriers did not exist. And, the crossing alignment was consistent with the greater Ridgeville Road system alignment. Consequently, the bridge was placed in its current location.

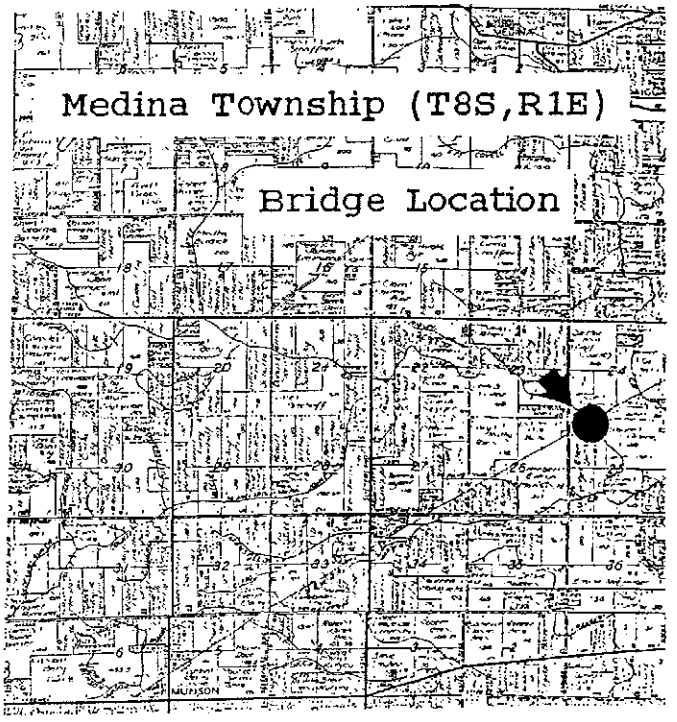
Significance of the Crossing

The crossing of Bean Creek in this location is most significant to local farmers and non-farm residents. Currently, detours of 4 or more miles are required pursuant to east/west movement. Annually, this results in significant losses of productive time, adds to vehicular and equipment wear, and promotes energy inefficiency.

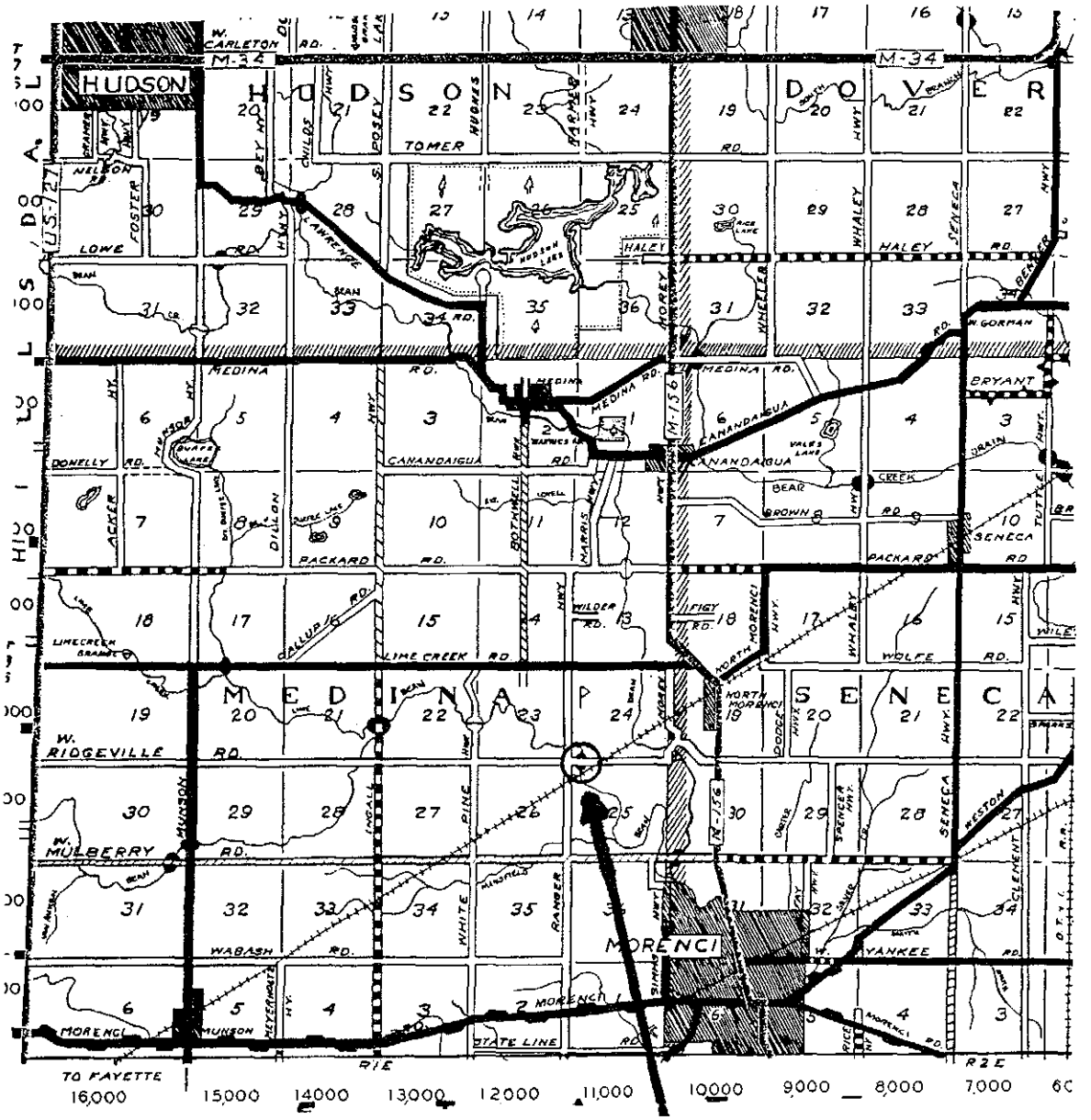
In later years of use, the geometrics and weight limitation of the bridge prevented the safe movement of farm equipment. In some instances, due to size of equipment, bridge crossings were not possible. Large tractors and other machinery such as combines, plows, mowers, and the like, were too heavy and/or too wide to be supported by the bridge. Such equipment generally did not exist at time of bridge construction.

At closure, daily traffic counts were estimated at 125 vehicles per day. If the bridge were to be reopened and improved to current State/Federal design standards, it is estimated counts would increase to 250 vehicles per day with approximately 10 percent truck or other commercial-type traffic. Assuming maintenance of area farms with limited non-farm growth, counts over the next 20 years are estimated to increase to 400 to 500 vehicles per day. Should area farmland, or significant portions thereof, be converted to residential use over the next 20 years, the amount of potential daily traffic is likely to be higher than estimated. Present land development trends indicate predominantly farm use.

Lenawee County/State of MI




**Regional Location Map**
**Ridgeville Road Bridge**
**MedinaTownship (Morenci, MI, 49256, vicinity)**
**Lenawee County**
**Michigan**




**Site Location Map**
**Ridgeville Road Bridge**
**Ridgeville Road**
**Section Lines 24 and 25**
**T8S, R1E**
**Medina Township (Morenei, MI, 49256, vicinity)**
**Lenawee County**

## SOURCES OF INFORMATION/BIBLIOGRAPHY

A. Engineering drawings: No drawings or design plans of the bridge are known to exist.

B. Historic views: No historic views of the bridge are known to exist.

C. Interviews: Orrin Gregg, Manager
Lenawee County Road Commission
Adrian, MI
Period of 1994 through 1996

D. Bibliography:

Environmental Assessment and Programmatic Section 4(f) Evaluation of the Ridgeville Road Bridge over Bean Creek. Lenawee County Road Commission in cooperation with the Michigan Department of Transportation. Adrian, MI, 1995. (Document on file at the offices of the Lenawee County Road Commission, 2461 Treat Highway, Adrian, MI, 49221, and the Michigan Department of Transportation, Local Services Division, P.O. Box 30050, Lansing, MI 48909.)

E. Likely sources not yet investigated: No additional sources of information are known.

F. Supplemental material: No supplemental material has been attached.